

A BASIC BIOSECURITY MODEL FOR AQUACULTURE SITES

Biosecurity plans are developed by the facility owner using the below criteria and are cosigned by the owner and UDAF. If the owner of an aquaculture facility wishes to clean up and sell live fish in the future, he develops a biosecurity plan that includes sections A-E. If the owner of an aquaculture facility wishes to continue operating as a fee fishing facility, the biosecurity plan needs to include aspects from sections B-E. Sections F-G are conducted by UDAF.

A. Basics for development of a written biosecurity plan and for clean up of an aquaculture facility

1. Protect your water supply. If covered or well water, prevent contamination.
2. Depopulate. This may be done by sales as approved by UDAF or by burying.
3. Clean and decontaminate (1600 ppm active chlorine bath for 24 hrs is very effective).
4. Test. Two tests for WD are needed. Fish are to be from the same lot. The first test occurs 6 mos after fish are in the water; the second test occurs 6 months after the first test. The second test is for all prohibited pathogens.
5. If all testing is negative, UDAF then addresses quarantine release procedures of State Veterinarian and Rule. UDAF needs to be assured that the disease has been halted and that the pathogen is no longer present in the facility or its fish.
6. Repopulation.
7. The biosecurity plan and its amendments remain in place and continue to be followed by the owner.
8. Annual inspections for prohibited pathogens begin.

B. Facility Grounds

1. Post sign explaining the rules of your site
2. Post sign about your biosecurity plan and disease control efforts.
3. Maintain premises in a clean manner. Lime grounds after the disinfection process (1 lb / sq yard quicklime).
4. No pets or livestock allowed on site.
5. Provide for control of rodents and other pests.
6. Fence facility and use locked gates.
7. If a closed supply (well, covered spring), protect it by fencing. If open supply, then test water using sentinel fish for contamination. Well water or covered springs are the best sources of water for maintaining disease-free conditions. Open water supplies should be phased out.
8. Periodically check water quality and maintain in good condition.
9. Keep water supply free of fish.
10. Use screens. Maintain and clean them. Use double screens if necessary. Screens are required by Rule.
11. Cover runs with bird netting where practical.
12. Replace dirt runs with cement, fiberglass or metal tanks.
13. Do not allow free public access to sensitive areas. Restrict public and their vehicles to designated areas and have them pass through a controlled area, such as a booth or manned gate. All visitors should be escorted around the property.
14. Notify UDAF of any unusual occurrences such as flooding, large numbers of escapees, high death losses, etc.
15. Leaflets on pathogens and diseases should be distributed or made available to the public.

C. Management Practices

1. Have trained personnel assigned to important duties. This assures accurate completion on a continual basis.
2. Provide workers with clean and usable outer garments, gloves, boots, etc.
3. Stock all facilities at the optimum level. This prevents overcrowding as fish grow and allows for best production.
4. Avoid overcrowding and other stressful situations which may precipitate disease outbreaks.
5. Take fish off feed for 1-2 days prior to and after handling, grading, shipping, etc.
6. Assure all incoming fish are from properly inspected and health approved sources. This is required by Rule.
7. Attend to youngest fish first and handle diseased fish last.
8. Give proper amounts of feed to reduce waste and optimize growth.
9. Feed by hand to attain more even distribution of feed and to better observe fish for health and behavior changes.
10. Remove and dispose of mortalities on a daily basis. Bury with quick lime (1 lb / cubic foot) or burn. If fish are captured for eating, place the remains from cleaning, filleting, and deboning in a pit with quick lime or burn.
11. Keep records of the number of daily mortalities. This may indicate the beginning of a disease outbreak.
12. Use appropriate vaccines where possible.

13. Provide and use disinfecting foot baths and hand washes.
14. Provide a secure and appropriately maintained storage area for feed. Protect feed from birds, pests, and excessive heat.
15. Clean raceways, runs, screens, and hatchery areas daily.
16. Provide double screens at the lower end of every run, raceway, or pond.
17. Disinfect runs and raceways between each lot of fish, if possible.
18. Maintain quiescent zones and sediment settling areas free of fish.
19. Until your facility has been sanitized, do not drive your vehicles onto or visit any neighboring facilities known to be free of fish pathogens. If this is necessary, then wash your vehicle and remove any mud or infected water from yourself before visiting the facility. When your facility has been sanitized and is approved for live sales, should you need to visit contaminated facilities, clean your vehicle and boots before entering your facility.

D. Equipment

1. Maintain a separate set of equipment such as nets, waders, crowders, etc. for each site. Don't use equipment between sites, whether they are contaminated or not.
2. Store all equipment in a clean, well maintained area away from pests.
3. Clean and disinfect equipment daily or immediately after each use.
4. Once your facility is sanitized, require entering vehicles to be cleaned before entry.
5. Clean vehicles @ 2500 psi to power remove organic debris (Steam Jennie) or use car wash. Small equipment can be disinfected in 200 + ppm bleach.

E. Steps to take if infection occurs

1. Contact the UDAF Fish Health Program personnel for advice, assistance, and development of a biosecurity plan.
2. Depending on the pathogen involved, the owner/operator shall restrict movement of the fish until they can be sold. Otherwise destroy and dispose of the fish.
3. Thoroughly clean and disinfect all troughs, runs, equipment, vehicles.
4. Consider replacing dirt runs with cement, fiberglass, or metal.
5. After appropriate disinfection time, restock with a small number of fish and have them inspected for the pathogen, as appropriate.
6. A change in operation style or a different species may be necessary.
7. After cleaning and decontamination, a 30-day waiting period should be observed. During this "cooling off" period, all rearing facilities should remain dry and, if possible, exposed to sunlight.
9. Determine testing procedures. This includes determining the number of test animals according to the size of the facility to be tested. The animals should be placed in live boxes to restrict their removal by animals and man. Live-boxes should be strategically placed, and the water in the rearing units should be held at the normal operational level. Samples of animals will be collected for laboratory examination according to the pathogen's life cycle.

F. Evaluate risk factors for movement of aquatic animals

1. Evaluation of risk assessment may be done by UDAF in conjunction with the owner.

G. Quarantine

1. UDAF places quarantines on aquaculture facilities contaminated with prohibited pathogens. Fee fishing facilities are not quarantined unless they are jointly licensed as aquaculture facilities for live fish sales.
2. UDAF appropriately notifies members the Fish Health Policy Board of the quarantine and of presumptive and confirmed test results.
3. Once a biosecurity plan and its amendments are signed by the owner and UDAF, are being followed by the owner, and all requirements in the Rule are met, the quarantine is reviewed by UDAF and may be removed by the State Veterinarian.